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Equipment recycling enhances university research

by Rex Swenson, Munitions Directorate

EGLIN AIR FORCE BASE, Fla. — Q: What do you get when you cross university students with military surplus scientific equipment? A: Smarter students at very little cost to the university.

Using a special program known as an Educational Partnership Agreement (EPA), the Air Force Research Laboratory Munitions Directorate at Eglin Air Force Base, Fla., donated some surplus scientific equipment to the University of West Florida (UWF).

During a Gulf Coast Alliance for Technology Transfer (GCATT) quarterly board of directors meeting, in 2001, Dr. William Huth, the Associate Vice President for Research and Graduate Studies at UWF first learned of the technology transfer mechanisms.

"The Munitions Directorate had some surplus equipment that was going to be sent to the Defense Reutilization Marketing Office," explained Mr. Allen Geohagan, a support contractor with MN who administered the EPA. "Now the equipment is being put to good use by students at UWF, instead of being scrapped."

Munitions Directorate environmental scientist, Mitch Bogle, explains the finer points of metallurgic analysis to UWF chemistry major, Sara Anastasio, during a recent visit to the university to set-up and calibrate the equipment, which had been donated through the Education Partnership Agreement. (Air Force photo by Rex Swenson)

According to the Educational Partnerships portion of the US Code, "Under a partnership agreement entered into with an educational institution, the director of a defense laboratory may provide assistance to the educational institution by transferring to the institution defense laboratory equipment determined by the director to be surplus."

Geohagan, who was instrumental in working the equipment transfer for the Air Force, explained further, "These Education Partnership Agreements are designed to allow the director of a defense laboratory to enter into an EPA with an educational institution to encourage and enhance study in scientific disciplines at all levels of education."

"Once we got it to the laboratories, we had an expert reassemble and calibrate the scanning electron microscope and other equipment, explained Dr. George Stewart, Chairman of the UWF Biology Department.

Geohagan and Mitch Bogle, an environmental scientist at MN, recently visited the university to tour the science department and see the equipment in action. While there, Bogle calibrated and demonstrated a piece of equipment used for metals analysis known as the X-Ray Fluorescence Spectrometer.

Since Bogle's demonstration, the XRF instrument has been used in the Instrumental Analysis course taught by Dr. Lois Dixon. Seven students, senior chemistry majors, have performed analyses on samples and objects selected by the students.

Samples included coins from different periods, medals, ores, glass objects, jewelry, and alloys. The students were required to submit reports, which included the theory, methodology and results.

According to Dixon, "The instrument works well and the experiments have been very successful. The students are particularly pleased to be able to analyze real world samples both accurately and rapidly."

Another instrument MN donated was a liquid scintillation spectrometer, which is used by the UWF Biology department to measure low levels of alpha radiation in uptake studies of marine life.

Biology professor Phillip Ryals was very excited about the

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Scanning Electron Microscope. “This equipment continues to provide students and professors with research opportunities unavailable prior to its donation,” Ryals said.

Phil Conklin, a UWF faculty member who has more than 20 years with the Chemistry Department said of the donation, “Prior to getting this electron microscope we were held back by the limited capability of our equipment, but now this will open up new avenues of research.”

Conklin added that both biology and chemistry students now use the infrared spectrometer, which has been co-located between the organic chemistry and biology laboratories. “This piece of equipment will allow students to gather research data from their samples in under five minutes,” Conklin said.

According to Dr. Stewart, “This is tremendously useful equipment and will continue to broaden the horizons in not only student research, but research performed by faculty members as well.” @